ATTACHMENT O

ITEM 27
PERSONNEL DOSIMETRY AND BIOASSAY PROGRAMS

I. MODEL PERSONNEL DOSIMETRY PROGRAM

1. The RSO will promptly review all exposure reports to look for workers or groups of workers whose exposure is unexpectedly high or low. This review will conform to the suggestions contained in Regulatory Guides 8.7 and 8.34. This procedure does not apply to backup monitor records, for example, pocket ionization chambers, when the monitor of record is a film or TLD.

2. All individuals who are occupationally exposed to radiation on a regular basis will be issued a film or TLD whole body monitor that will be processed by a contract service on a monthly or quarterly basis.

3. All individuals who, on a regular basis, handle radioactive material that emits ionizing photons and could exceed 10% of the applicable limit set forth in A.A.C. R12-1-408 and R12-1-414, will be issued appropriate personnel dosimetry that will be processed by a contract service.

4. All individuals who are occupationally exposed to radiation on an occasional basis, such as nurses caring for radiopharmaceutical therapy or implant patients, will be issued a whole body monitor when caring for those patients.

5. Other individuals who are exposed to radiation on an occasional basis, such as security who deliver packages, secretarial personnel who work in the nuclear medicine clinic but do not work with patients, and nurses who occasionally care for patients who have received diagnostic dosages will not normally be issued exposure monitors.

6. When monitoring pursuant to R12-1-419(A) and (B) the licensee is required to demonstrate compliance with dose limits by summing external and internal doses (R12-1-409). Records of the summed dose shall be recorded on Form Z (attached) or other clear and legible record.

7. Individuals that are allowed to enter a restricted area and are likely to receive, in one year, an occupational dose requiring monitoring will have their histories of occupational doses for the current year determined. At a minimum, an attempt will be made to obtain a new employee’s exposure history for the current year to ensure the annual limit is not exceeded. All new employees will be asked to provide the records of lifetime cumulative occupational radiation doses. Record of exposure history will be maintained on Form Y (attached) or other clear and legible record. Planned special exposures will require documented exposure histories in accordance with R12-1-413.

8. Bioassays will be conducted on individuals that may be exposed internally to radioactive material. The bioassays will be conducted at intervals and with equipment that will detect 10% of the levels of the radionuclides listed in Appendix B of Article 4. Attached are the bioassay procedures and a listing of equipment that will be used in conducting the bioassays. Attachment O-1 contains further details of the bioassay program that will be employed.
II. PERSONNEL DOSIMETRY INFORMATION

Provide the following information:

1. Dosimetry Supplier:

2. Type: 
   - Film
   - TLD
   - Beta-Gamma
   - Beta-Gamma, Neutron
   - Whole Body
   - Ring
   - Wrist

3. Exchange Frequency:
   - Whole Body: 
   - Ring: 
   - Wrist: 

4. Results Reviewed by:

5. Records maintained by:

6. Individual responsible for overexposure reports:

7. A. Model procedure for monitoring personnel external exposure will be followed.
   B. Equivalent procedures attached

III. BIOASSAY PROGRAM

Initial applicable statements and provide required information:

1. A bioassay program will be performed in accordance with A.A.C. R12-1-419(D).
   A. This rule states that an individual participates in a radioiodine bioassay if the individual:
      1. Is likely to receive an annual intake in excess 0.1 of the Annual Limits of Intake (ALI) specified in Table 1, Columns 1 and 2 of Appendix B in 12 A.A.C.1, Article 4;
      2. Is a minor or declared pregnant woman likely to receive an annual committed effective dose equivalent in excess of 50 mRem, or
      3. Has been involved in a spill, an incident, or other occurrence during which radioiodine may have been taken into the body either by inhalation, ingestion, or by absorption through the skin or a wound.
   B. If personnel are involved directly with a radioiodine therapy, each Individual who handles radioiodine stock solutions, or is involved in iodinations, and meets, as a minimum, any one of the three criteria in Part A above, must participate in a bioassay soon after the exposure to radioiodine. It is currently acceptable to do an I-131 bioassay up to four weeks following the exposure and 12 weeks following the exposure to I-125. Obtain Agency approval, however, if you decide to do the bioassay at periods greater than 6 to 72 hours following exposure.
C. For any individual whose cumulative annual intake is likely to exceed 0.1 ALI, a dosimetric determination based on the results of the bioassay perform under Part B must be performed. To assist in determining the total dose equivalent for the individual, add the obtained dose information to the committed dose equivalent information for the exposed individual. For the exposed individual whose bioassay exceeds 0.25 ALI, restrict the exposed individual from further radioiodine exposure until a bioassay indicates the individual’s exposure has dropped below 0.1 ALI.

D. For bioassays exceeding 0.1 ALI, investigate the circumstances surrounding the exposed individual’s uptake. Records of the investigation and all bioassay measurements must be maintained as part of the licensee’s personnel dosimetry records and must be available for inspection by the Agency.


2. _______ Bioassay will be performed in-house. Procedures are attached indicating personnel to perform bioassay, instrumentation to be used, calibration standard used, sample dose calculations, sample records and individual to maintain records.

3. _______ Bioassay will be performed by outside firm. The firm used will be:

______________________________________________________________
License No.: __________________

4. _______ No bioassay program required by this facility.

IV. **SUMMATION OF DOSE WILL BE CALCULATED IN ACCORDANCE WITH R12-1-409**

__________________________________________  _________________
SIGNATURE                              DATE